New Lisa Display Modes

We now have a palette of 2^24 colors *

LORES (320x200)

6 Bitplane (non HAM, non EHB)	64 colors	1X
7 Bitplane	128 colors	1X
8 Bitplane	256 colors	1X
8 Bitplane HAM	Any of 2^24 colors	1X
Dual Playfield, Max 4 Bitplanes per playfield 16 colors per playfield. The bank of 16 colors in the 256 color palette is selectable per playfield.		1X

HIRES (640x200)

5 Bitplanes	32 colors	2X
6 Bitplanes	64 colors	2X
7 Bitplanes	128 colors	2X
8 Bitplanes	256 colors	2X
6 Bitplanes EHB	32 * 2 colors	2X
6 Bitplanes HAM	4096 colors	2X
8 Bitplanes HAM	any of 2^24 colors	2X
Dual Playfield, Max 4 Bitplanes per playfield 16 colors per playfield. The bank of 16 colors in the 256 color palette is selectable per playfield.		1X

SUPERHIRES (1280x200)

1 or 2 bitplanes, as ECS, but with no color fudging		1X
3 Bitplanes	8 colors	2X
4 Bitplanes	16 colors	2X
5 Bitplanes	32 colors	4X
6 Bitplanes	64 colors	4X
7 Bitplanes	128 colors	4X
8 Bitplanes	256 colors	4X
6 Bitplanes EHB	32 * 2 colors	4X
6 Bitplanes HAM	4096 colors	4X
8 Bitplanes HAM	any of 2^24 colors	4X
Dual Playfield, Max 4 Bitplanes per playfield 16 colors per playfield. The bank of 16 colors in the 256 color palette is selectable per playfield.		2X

VGA (640x480 non-interlaced)

1 or 2 bitplanes, same as ECS, but with no color fudging		1X
3 Bitplanes	8 colors	2X
4 Bitplanes	16 colors	2X
5 Bitplanes	32 colors	4X
6 Bitplanes	64 colors	4X
7 Bitplanes	128 colors	4X
8 Bitplanes	256 colors	4X
6 Bitplanes EHB	32 * 2 colors	4X
6 Bitplanes HAM	4096 colors	4X
8 Bitplanes HAM	any of 2^24 colors	4X
Dual Playfield, Max 4 Bitplanes per playfield 16 colors per playfield. The bank of 16 colors in the 256 color palette is selectable per playfield.		2X or 4X

Super 72 (848x614 interlaced, 72Hz frame rate)

1 or 2 bitplanes, same as ECS,	but with no color fudging	1X
3 Bitplanes	8 colors	2X
4 Bitplanes	16 colors	2X
5 Bitplanes	32 colors	4X
6 Bitplanes	64 colors	4X
7 Bitplanes	128 colors	4X
8 Bitplanes	256 colors	4X
6 Bitplanes EHB	32 * 2 colors	4X
6 Bitplanes HAM	4096 colors	4X
8 Bitplanes HAM	any of 2^24 colors	4X
Dual Playfield, Max 4 Bitplanes per playfield	16 colors per playfield. The bank of 16 colors in the 256 color palette is selectable per playfield.	2X or 4X

All playfield scrolling is now in 35ns increments.
In the original chip set scrolling was in 140ns increments.

SCROLL RANGE AS PROGRAMMED IN BPLCON1

1X Modes:	LORES pixels	SHRES pixels
LORES	0-15	0-63
HIRES	0-7	0-31
SHRES	0-3	0-15

2X Modes:	LORES pixels	SHRES pixels
LORES	0-31	0-127
HIRES	0-15	0-63
SHRES	0-7	0-31

4X Modes:	LORES pixels	SHRES pixels
LORES	0-63	0-255
HIRES	0-31	0-127
SHRES	0-15	0-63

SPRITES

All sprites can now be displayed in either:

1) ECS default mode
2) 140ns (this is not ECS mode1X)
3) 70ns
4) 35ns

on any display resolution. eg 35ns sprites on a lores screen, or 140ns sprites on a superhires screen.

Sprites are either 16, 32, or 64 bits wide
Sprites can be attached in any mode (formerly could not attach sprites in the ECS SHRES 35nS resolution mode).

Can use any bank of 16 colors from the 256 color palette for the sprite colors.

Note:

1X - requires at least normal CAS and 16 bit bus

2X - requires at least normal CAS and 32 bit bus or double CAS 16 bit bus
4X - requires at least double CAS and 32 bit bus
* - may be reduced to 2^18 = 262144 colors depending on cost of silicon
** - may be reduced to 16 or 32 bits long depending on cost of silicon

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